

WHAT REALLY BREAKS DOWN WHEN THERE'S PARTICLE CONTAMINATION?

PARTICLE CONTAMINATION ERODES MORE THAN EQUIPMENT

THINK HYDRAULIC EQUIPMENT FAILURE IS AN ISOLATED ISSUE—JUST A COST OF DOING BUSINESS? THINK AGAIN.

When machinery components break down, it puts your entire operation at risk

THE ROOT CAUSE OF FAILURE

#1 CAUSE

Of lubricant-related failures in hydraulic equipment is contamination¹

82%

Of mechanical wear is due to particle contamination²



2 OUT OF 3

Equipment failures are attributed to abrasion²

SWEAT THE SMALL STUFF

Foreign particles limit the ability of lubricants to perform at peak levels. In fact, particles smaller than what the naked eye can see can cause huge issues. Once inside the system, particles grind away, creating more wear and more contamination.



THERE'S MORE AT STAKE THAN A SINGLE PIECE OF EQUIPMENT

When machines are sidelined by breakdown, a business-wide chain reaction begins

WHILE THIS GOES UP

**FINES
LABOR
DOWNTIME
REPAIR PARTS
ACCIDENT RISKS
MISSED DEADLINES**

THIS GOES DOWN

**FUTURE OPPORTUNITIES
COMPANY REPUTATION
EMPLOYEE MORALE
PRODUCTIVITY
PROFIT
TRUST**

THE SOLUTION IS PREVENTION

Set a strong foundation with a certified clean lubricant to protect your operation and your bottom line

DIY FILTRATION

On-site filtration can be expensive, labor intensive and reduce lubricant performance by over-filtering

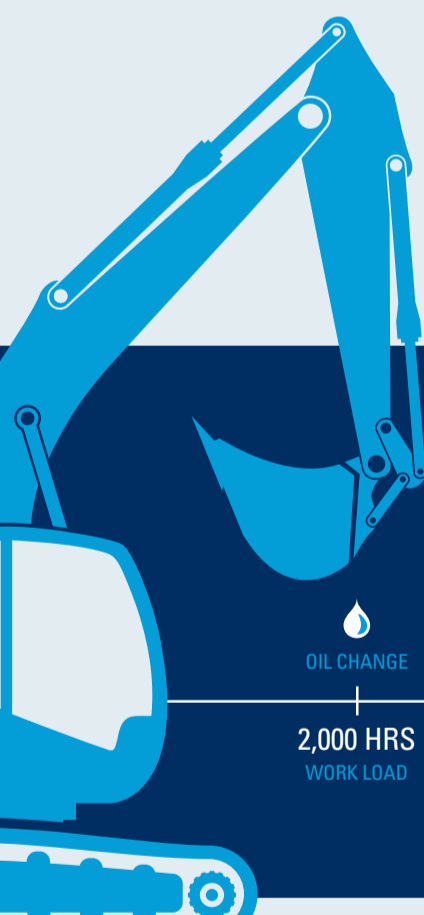
90% SAVINGS

When you work with a clean system to stay clean vs. cleaning up a dirty system¹

START CLEAN. STAY CLEAN.

The best way to extend equipment life is to start clean and follow proper lubricant storage and handling practices

TAKE A TYPICAL EXCAVATOR HYDRAULIC SYSTEM...



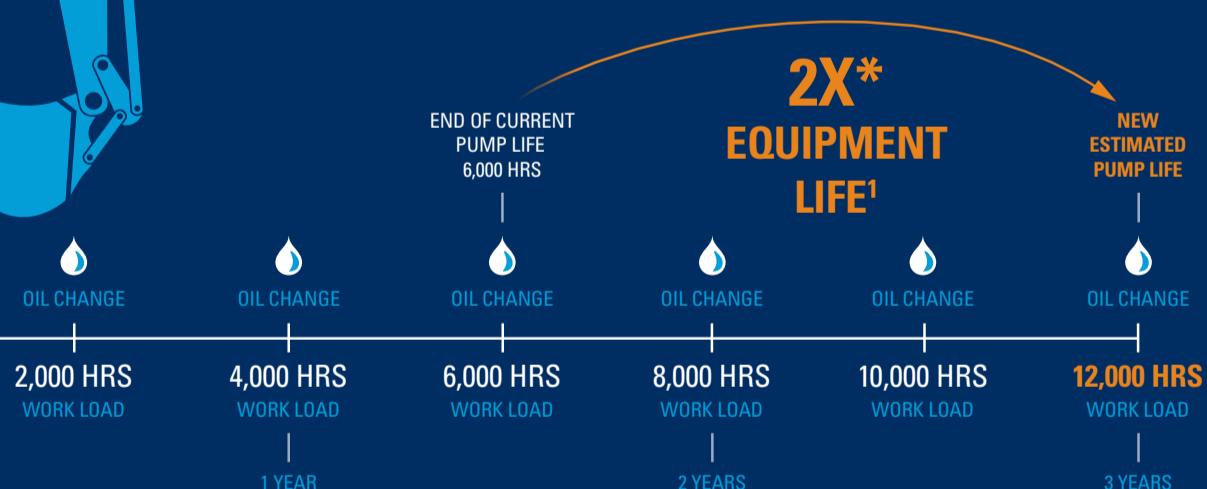
CALCULATION EXAMPLE

EQUIPMENT INFO

Operating use 4,000 hrs/year
Operating revenue \$250/hr
Hydraulic pump Variable piston
Pump replacement \$8,500
Pump repair time 24 hours
OEM ISO cleanliness spec 17/15/12

ROUTINE MAINTENANCE

Service interval 2,000 hrs
Hydraulic capacity 45 gal
Top off between intervals 10 gal
Filter cost 2 @ \$25
Typical labor rate \$125/hr
Repair time 1 hr



*Actual savings vary depending on equipment type, equipment condition and previous condition, and the ability to keep the fluid clean.

TYPICAL LUBRICANT

ISO cleanliness code 20/18/15
Lubricant cost \$9.00 gal
Pump life 6,000 hrs

3-YEAR MAINTENANCE COSTS

Lubricant cost \$2,970
Filter replacements \$300
Repair labor \$750
Lost revenue \$1,500
= \$5,520

3-YEAR REPAIR COSTS

Hydraulic pumps (2) \$17,000
Repair labor 48 hrs = \$6,000
Lost revenue 48 hrs = \$12,000
= \$35,000

CERTIFIED CLEAN LUBRICANT

ISO cleanliness code 17/15/12
Lubricant cost \$12.62 gal**
Pump life 12,000 hrs

3-YEAR MAINTENANCE COSTS

Lubricant cost \$4,164
Filter replacements \$300
Repair labor \$750
Lost revenue \$1,500
= \$6,714

3-YEAR REPAIR COSTS

Hydraulic pumps (1) \$8,500
Repair labor 24 hrs = \$3,000
Lost revenue 24 hrs = \$6,000
= \$17,500

**Estimated price

INVEST \$1,194 MORE IN LUBRICANT COST FOR AN ESTIMATED SAVINGS OF \$16,306 ROI = +1300%

LEARN WHAT PARTICLE CONTAMINATION IS COSTING YOUR BUSINESS AT CHEVRONINDUSTRIAL.COM/ISOCLEAN



CLEAN. REDEFINED.



1. NORIA Corporation.
2. STLE/NRCC